

153. Finally, as noted earlier, BOC entry has the potential to yield significant benefits in provision of integrated services and increased long-distance competition. Since the potential costs can be mitigated through regulatory, antitrust and other safeguards once the market is open and benchmarks are in place, coupled with some local competition, the value of attaining earlier the benefits of BOC entry reinforces the case for approving such entry well before effective local competition is in place.

#### **B. The Local Market Must Be Irreversibly Open to Competition**

154. While section IV showed that regulators can do a reasonable job of preserving established arrangements, it also raised significant doubts about their ability to expeditiously enforce new arrangements in the face of BOC resistance. This is particularly an issue for the new local-competition arrangements required by the Act, many of which entail radical departures from past practice. Given the pivotal role of these arrangements in laying the foundation for local competition as envisioned in the Act, and that local competition holds the key to achieving the Act's goals, I believe that BOC entry should be authorized only once there is sufficient confidence that the BOC's local market has been irreversibly opened to competition through all three entry modes contemplated by the Act. Several steps, discussed next, lead to this conclusion.

##### **1. BOC incentives to cooperate can make a great difference**

155. The BOCs themselves seem quite aware of their latitude, within the regulatory and legislative constraints, to affect the pace and efficacy of the process to open up local markets to competition. The importance of BOC cooperation is illustrated by contrasting the experiences of intraLATA toll versus interLATA markets. BOCs successfully delayed implementation of dialing parity for intraLATA toll markets, where they were allowed to compete. In contrast, establishing the physical and administrative arrangements for equal access to IXCs after divestiture was a considerable achievement for the industry, and it was made possible in large part by BOCs' willingness to cooperate given that they were barred from directly participating in long distance and thus had strong interests in ensuring efficient operation of the exchange access business.

##### **2. Importance of securing BOC cooperation before authorizing entry**

156. As explained previously, relying on penalty threats to force implementation of new systems is problematic, because enforcers will have far less information than the BOC about how long the

process should take. Providing a BOC with incentives to act faster—by authorizing its entry only once sufficient implementation has occurred—will accomplish the process more quickly and more efficiently. Once these main new technical and organizational access arrangements for local competition are in place and shown to be working, they can establish performance benchmarks to assist enforcers in preventing future backsliding. That is, pre-entry implementation of the new systems makes regulatory and other safeguards considerably more effective and less burdensome.

157. On the other hand, once entry is authorized, BOC incentives to continue cooperating will diminish significantly. As a practical matter, rescinding a BOC's long-distance authority would be difficult and, in any event, would be disruptive. While freezing a BOC's future marketing authority would be a more practical option, it also is less potent. Faced with a loss of an important incentive mechanism—the § 271 entry authority—BOC cooperation would have to be induced by threatening penalties which, as noted, are less effective when the issue is implementation of new measures. Thus, it is important to grant BOC entry only after sufficient cooperation has first been secured.

### **3. The benefits from delayed BOC entry outweigh the costs**

158. The Department of Justice's standard would involve some delay in BOC entry relative to adopting an "early" entry standard that required only checklist compliance on paper. This will impose non-trivial costs, by temporarily depriving consumers of increased availability of integrated services, as well as increased competition in long-distance services (see section II). But the costs of delay are outweighed by the prospective benefits.

#### **a. Local versus long-distance markets**

159. A BOC's local markets are about twice as large as its in-region long-distance markets. In addition, the local market is a regulated monopoly, with substantial room for improvement in performance. In contrast long-distance markets, though not perfectly competitive, exhibit considerable rivalry and are becoming more competitive even without BOC entry. The gains from injecting even a modest dose of local competition can thus easily outweigh those from adding one, albeit major, competitor into long-distance markets in a BOC's region. (Recall that BOCs already may offer long-distance service outside their regions.)

160. Aside from its inherent benefits, local competition can also help safeguard long-distance competition in the longer run. A BOC's entry into long distance is likely, over time, to pose a growing threat to the ability of IXC's to compete with it on an equal footing, or invite more intrusive regulation to prevent this, than if local competition emerged sooner. Finally, local competition holds the key to robust competition in offering integrated services—since the key monopolized pieces are local inputs and services.

**b. Integrated services**

161. "*Competitive parity.*" The BOCs argue that any delay of their entry into long distance would give their competitors—especially the major IXC's—important and unfair first-mover advantages in competing to provide integrated services (such as offering one-stop shopping). In addition, and somewhat inconsistently, they argue that delaying BOC entry would deny consumers the benefits of these offerings which the BOCs—if allowed into long distance—would be *uniquely* positioned to provide. I address first the issue of competitive parity, then the more important questions of impact on consumers and on overall welfare.

162. In general, the competitive process works best when no artificial handicap is placed on competitors and all firms are allowed to compete on the merits. At first glance, delaying BOC entry while IXC's and others make inroads into local markets may seem to violate this principle of respecting competitive parity in offering integrated services. This, however, overlooks the fundamental asymmetry in the position of a BOC versus other players.

163. The BOC is the sole major source of local services in its region. In contrast, there are several national and many regional facilities-based providers of long-distance services. If reciprocal entry is allowed concurrently—that is, if BOC entry into long distance is allowed immediately—the BOCs will have a major and artificial advantage in offering integrated services. They will be able to obtain long-distance services rapidly, seamlessly, and at prices very close to cost—because of the vigorous competition among IXC's vying to sell such services to a large wholesale customer as the BOC. In contrast, other would-be providers of integrated services have only one major source for local services: the BOC. Once allowed into long distance, a BOC would have strong incentives to deny to others the various wholesale local services they need to offer integrated services. Potential

competitors would have to wrangle with this sole provider for every new access arrangement or discount. Regulatory and antitrust intervention can certainly help, but it cannot in a cost-effective manner eliminate entirely the disadvantage resulting from the absence of local competition; if it could, we would rely on regulation and not insist on competition.

164. Moving towards parity in competition for integrated services therefore calls for insisting that the BOCs first take substantial measures to open up their local markets—even if by doing so they expose themselves to some entry—because once they are allowed into long distance they can rapidly make up any advantage the IXC's might have temporarily gained.<sup>59</sup>

165. *Effect on consumers.* More important than the effect on competitive parity for its own sake, is the effect delayed BOC entry has on consumers of integrated services and on overall welfare. Delaying BOC entry would delay delivering the benefits of integrated services to consumers through the BOC. However, integrated services will be available to some extent from non-BOC sources. Competitors other than the largest three IXC's could attempt to obtain BOC local services for total service resale. And all competitors could attempt to provide their own local services through facilities-based entry or through use of unbundled local elements leased from the BOC.<sup>60</sup>

166. Admittedly, competitors are unlikely to obtain such local inputs or services as efficiently and expeditiously as the BOC would have offered its own long-distance affiliate. It will take time and regulatory pressure to implement the necessary new arrangements for supplying competitors with

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<sup>59</sup> The structure of the Act reflects a desire to prevent either the BOCs or the IXC's from gaining a substantial "first mover" advantage in offering packages of local and long-distance services, and does so by attempting to deny either one a significant head start. Thus, § 271 requires the opening of the local market to competition—for both resale and unbundled element competition—before BOCs may enter the long-distance market. Similarly, § 271(e) prohibits large IXC's from jointly marketing resold local services in a state prior to the BOC's long-distance entry and, except where already required by a state, limits the implementation of intraLATA toll dialing parity prior to the BOC's entry. Finally, the Act requires the FCC to act on § 271 applications within 90 days, a requirement that ensures that BOC entry will occur promptly after—but not before—all prerequisites for such entry have been satisfied. I believe these requirements are consistent with the above reasoning.

<sup>60</sup> Although the Act prohibits the three largest IXC's from jointly marketing long-distance services with local services obtained from the BOC for total service resale, until BOC interLATA entry is authorized (or until February 1999), it allows joint marketing of local services provided via one's own facilities or via unbundled BOC elements.

wholesale local services. Quite aside from BOC reluctance, there may be genuine transaction costs in making local inputs available to others as smoothly as to one's own affiliate; transaction costs often explain why in many settings firms prefer vertical integration over arm's length contracting with others. Thus, the local components of integrated services available from non-BOC suppliers are likely to be inferior to or not available as promptly as those that would be available from a BOC if it were immediately allowed to offer long-distance and thus integrated services. This inferiority will show up in the price or quality of the integrated services offered to consumers by non-BOC providers.

167. However—and this is the rub—the BOC will more willingly supply to others its local services or inputs and on better terms if it is barred from long-distance and thus integrated services. As explained earlier, a BOC's incentives to promote such wholesale products increases if it is barred from selling, especially at unregulated prices, competing retail services.

168. In short, barring a BOC from long distance creates a tradeoff regarding integrated services. No other competitor is likely to have as good a set of local services as quickly as would a BOC if allowed immediate interLATA entry. But while a BOC is barred from offering retail integrated services, it has incentives to supply others with wholesale local services on better terms than after it secures interLATA entry. This availability of "better" local inputs to a broader set of players is valuable; additional players bring greater variety and other benefits (improved customer service, more experimentation with new pricing plans, and other creative offerings). The net effect of earlier BOC entry on market performance in delivering integrated services is thus theoretically ambiguous in the short run. In the long run, competition in integrated services is likely to be far more robust and performance thus superior if strong local competition emerges. That goal is better advanced by authorizing BOC entry only after the conditions of the Department's standards have been met.

169. For all these reasons, accepting a modest delay in BOC entry to comply with the Department's standard is a worthwhile price. BOC cooperation in implementing the § 271 competitive checklist requirements would go a long way towards laying the foundation for healthy local competition. And securing such cooperation is far more likely by making it a prerequisite for BOC interLATA entry. Accepting a modest delay of BOC entry does not foreclose future options; but once entry authority is granted, we may have lost an important tool for opening the local market.

### C. Local Competition as Evidence of an Open Market

170. Seeing significant and diverse local competition take root provides by far the best evidence that the market indeed has been irreversibly opened to competition. On the other hand, even with an open market, local competition may still be delayed for other reasons.<sup>61</sup> In particular, we should not expect to see all forms of local competition in all locations, and certainly not right away; indeed, the guiding philosophy of the Act is that market forces should be allowed to dictate what works and what doesn't, once artificial barriers have been removed. For example, if we are successful in ensuring that incumbents make available unbundled network elements at prices reasonably close to incremental cost and if such arrangements work smoothly, then it would be wasteful to insist that entrants build entirely their own facilities.

171. Balancing these two considerations, I see the role of observing local competition as establishing presumptions: if sufficient competition is observed, the market is presumed open. If not, one should ask why not; the BOC would face a heavier burden to demonstrate that the market is truly open and that the absence of actual competition was not for lack of BOC cooperation in opening up its networks to competitors.

172. The best proof is in the pudding: the emergence of local competition provides by far the best evidence and assurance that the local market indeed has been irreversibly opened. Observing local competition is helpful for several reasons.

173. *Checklist implementation.* Seeing some actual competition is the most convincing demonstration of meaningful checklist implementation. Without seeing new access arrangements in use by competitors, there will be lingering doubt as to whether these arrangements are truly adequate or whether their pricing is appropriate to make entry by efficient competitors feasible.

174. *Signal of entrants' confidence.* Competitors' willingness to commit significant irreversible investments to the market (sunk costs) signals their perception that the requisite cooperation from incumbents has been secured or that any future difficulties are manageable. Since competitors are

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<sup>61</sup> For instance, some potential entrants are re-evaluating plans to build their own loops and waiting for technological advances that would allow broad-band delivery capability and let them offer not only telephone service but also video and data services.

knowledgeable about the industry and have an obvious stake in making competition work, their actions speak loudly.<sup>62</sup> Indeed, firm plans to commit substantial investments to the market could be a better indicator than observing a more limited amount of competition already in place. (It is important, however, that the plans be firm, e.g., involving contracts for specialized equipment that entail substantial penalty clauses for cancellation. There is a long record of plans to enter local phone service that have been perennially revised, such as by the cable companies to cite one example.)

175. *Entrants' direct role in safeguarding competition.* Quite aside from signaling confidence that local competition can be successful, the presence of competitors can directly help to prevent backsliding on cooperation by incumbents. The presence of competitors can provide regulators with additional benchmarks of what is possible and at what cost, thereby helping regulators (or the courts) to better enforce incumbent cooperation. In addition, established competitors create an additional constituency with a stake in preventing backsliding by incumbents or regulators. Once established competitors are in place, they can help to limit discrimination by acting as whistle blowers.

176. In all cases, of course, the more widespread is the local competition geographically, in the types of services offered, and in the range of access services used from the incumbent, the greater is our degree of confidence that the market has been opened.

177. *Resale versus other entry modes.* It is important to ensure that facilities-based entry options (including through unbundled elements) are truly made possible, as they have important potential advantages over total service resale. They can discipline an incumbent's behavior in more segments, not only on the retailing side but also in certain network functions; for example, entrants renting unbundled loops but bringing their own switches can help curb switch-based discrimination against long-distance carriers in securing local access, and can allow the introduction of new services based on the electronic features in the switch.

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<sup>62</sup> In general, it is instructive to observe the actions of parties that have a direct interest in the outcome, because they are likely to have better information than outsiders or find it in their incentives to obtain such information. This principle of "follow the money" has led economists to place substantial weight on how the stock market interprets various events.

178. In addition, entry using unbundled elements can often exert stronger downward pressure on retail prices than can entry through resale—partly due to the different pricing standards adopted in the Act: wholesale prices for total service resale are computed “top down,” by starting with retail prices and subtracting only the avoided retailing costs; in contrast, unbundled elements are priced “bottom up,” by starting with the estimated facility costs of these elements. Since retail prices for many services are well above the underlying costs of both retailing and network elements, subtracting only the estimated retailing costs to obtain wholesale prices for total service resale is likely to still leave these wholesale prices above the underlying costs of facilities.

#### **D. Assessing Local-Market Openness in the Absence of Sufficient Competition**

179. As mentioned, we do not expect to see all forms of competition everywhere. However, if sufficiently diverse competition is not observed, it is important to understand why. Before concluding that this is simply for lack of interest by entrants in pursuing certain entry modes in certain regions, it is important to ascertain that competition is not being stifled by artificial barriers. Indeed, absent a showing by the BOCs that lack of entry simply reflects a lack of interest, the presumption should be that the market is not open. Reversing this presumption requires verifying that the main elements of an open market indeed are in place. The main elements are discussed below.

##### **1. Full, meaningful implementation of new access arrangements**

180. Many of the access arrangements required by the Act for local competition are new. They raise a host of novel issues in technical areas (e.g., loop unbundling), business protocols (e.g., for switching customers from the incumbent to entrants under total service resale), and sharing operations support systems. A condition for finding the local market open, when sufficiently diverse local competition is not yet observed, should be that all such major systems and protocols (including but not limited to loop unbundling, electronic interfaces, operations support systems, access to signaling and databases) are readily available for commercial usage. They should provide regulators sufficient confidence that the conditions have been established to facilitate efficient entry through all three entry modes contemplated in the Act (facilities based, unbundled network elements, and resale), and for serving all major types of customers. And they should provide a sufficient track record of performance to give regulators reliable benchmarks for gauging and enforcing future cooperation.



181. Moreover, the scale of operations is critical. Systems that stringently cap the rate at which the incumbent's customers can switch to competitors, for example, by processing orders manually or having only a few and perennially busy fax machines, are a sure way to stifle competition. In order not to significantly impede competitors' ability to expand, the above systems should also be capable of being scaled up relatively quickly to accommodate reasonably foreseeable expansion demanded by entrants in a given geographic region (e.g., the ability to rapidly switch over to the entrant a large number of customers, through loop unbundling or total service resale); and capable of being rapidly extended to regions where they are not initially implemented. In addition, a BOC must have implemented number portability and local dialing parity.

182. These new access arrangements must be proven to work in practice. Many of the arrangements called for by the Act (such as loop unbundling) are unprecedented. Implementing such radical new arrangements often proves more difficult than expected even where there is goodwill on both sides.<sup>63</sup> These difficulties increase by an order of magnitude, however, when one side is recalcitrant; there is then endless scope for acrimony and mutual finger pointing, creating a regulatory morass. It is therefore important to have some practical experience with these arrangements, under real-world business conditions and not just in the laboratory, and iron out the major kinks while incumbents are still relatively predisposed to cooperate. The absence of (non-trivial) competition calls for waiting longer to test the new access arrangements, because experience with them under competitive conditions could help pinpoint potential problems more quickly. One should conclude that the market is open only if there is sufficient confidence that the major implementation problems have been resolved.<sup>64</sup>

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<sup>63</sup> For example, I learned from Bell Atlantic in July 1996 that it had been working with MFS in Baltimore since February 1995 to implement loop unbundling and had encountered considerable difficulties despite both parties' attempts to work cooperatively.

<sup>64</sup> Indeed, the arbitration process has not addressed all the relevant issues. (1) Many states have yet to establish performance standards and in certain cases have been reluctant to involve themselves at all in private negotiations on such matters despite appeals by entrants to do so. (2) Some states have determined that certain issues (such as liquidated damages), were outside their jurisdictional boundaries, wholly precluding their consideration in arbitration. Thus, insistence on appropriate performance benchmarks through the § 271 process can usefully complement state efforts.

## **2. Cost-based pricing of new local-competition access arrangements**

183. "Availability" of the above access arrangements will be illusory if prices are prohibitively high. Thus, interconnection agreements forming the basis for § 271 entry authority under Track A, or interconnection offers under Track B, should provide entrants with satisfactory pricing assurances. Prices should be reasonably close to cost, as stipulated in the Act. And competitors must have adequate assurance that prices will remain reasonable and cost-based after interLATA relief is granted, in order to make efficient entry viable. Thus, if interim prices are used in the BOC's agreements or offers, there should be some assurance that after interLATA entry is authorized the BOC's prices to local competitors will remain within a tolerable range of these interim levels (e.g., indexed to inflation plus or minus a modest deviation) for a sufficient duration.

184. Even entrants building their own networks will require reasonable prices for terminating their calls on the incumbent's network; assuring such prices is thus critical to the development of facilities-based local competition. Reasonable prices also are necessary for unbundled network elements if, as Congress intended, we are to facilitate also partial facilities-based competition; it would be tremendously costly, slow, and often inefficient for entrants to duplicate the incumbent's entire local network, especially its local loop. Finally, reasonably-priced local service for total service resale is needed in order to provide other carriers a meaningful opportunity to compete quickly and widely in providing integrated services.

185. *Pricing standards.* Section 252 (d) of the Act requires state commissions to use the following pricing standards in arbitrating disputes between incumbents and local competitors: (1) prices of interconnection and unbundled network elements should be based on each party's cost of providing these items; (2) prices of transport and termination of local calls should provide for mutual and reciprocal recovery by each carrier of (a reasonable approximation of) the additional costs of terminating such calls; and (3) wholesale prices should be based on retail prices for these services minus the marketing, billing and other costs that will be avoided by the LEC by selling at wholesale versus at retail.

186. The FCC in its Local Competition Order, while acknowledging that responsibility for arbitrating specific price levels rests with state commissions, proposed a methodology for arriving at

prices: (1) for interconnection and unbundled elements, use forward looking Total Element Long-Run Incremental Cost (TELRIC); and (2) for transport and termination, require symmetric prices based on the incumbent LEC's TELRIC. It suggested proxy ranges for these prices, and for wholesale discounts for total service resale, that a state commissions could use pending completion of its own cost study. These pricing rules and interim proxies were generally praised by competitors, but have been stayed by the Eighth Circuit. Considerable uncertainty remains about the course of these key prices.

187. *Role of § 271 entry authority.* Denying BOC interLATA entry when local competition is seriously impeded by inappropriate BOC pricing of key local inputs can accelerate opening of the local market. Although state commissions are empowered to arbitrate pricing disputes between incumbents and competitors, awareness that the § 271 process will weigh seriously whether key inputs are priced in a manner that supports efficient local entry will usefully complement state efforts to enforce procompetitively low input prices by the BOC to competitors in order to open the local market. This point merits elaboration.

188. State arbitration of interconnection agreements does not occur in a political vacuum. Rather, prices emerging from arbitration are likely to reflect the demands and bargaining powers of the incumbent and its potential competitors. There is great asymmetry in these bargaining powers—since the dominant incumbent is content to preserve the status quo, while the entrant is clamoring for an agreement. By making procompetitive BOC prices to local competitors a requirement for finding the local market to be open one can help reduce the bargaining-power asymmetry, and thus reduce the BOC's prices—thereby complementing state efforts to foster local competition.

### **3. Removal of substantial regulatory and other barriers**

189. Finally, in order to be confident that the local market is irreversibly open, one must ascertain that there remain no major state regulatory or other artificial barriers likely to significantly delay local competition. The Act requires removal of such barriers;<sup>65</sup> but there are gray areas. States have some

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<sup>65</sup> Section 253(a) states: "No State or local statute or regulation, or other State or local legal requirement, may prohibit or have the effect of prohibiting the ability of any entity to provide any interstate or intrastate telecommunications service." Section 253(d) empowers the FCC to preempt such barriers.

latitude to impose obligations under the rubric of protecting universal service; local authorities may manage public rights-of-way or require fair and reasonable compensation for their use. Although all such actions must be on a competitively neutral and nondiscriminatory basis, there is sure to be controversy over the precise meaning of these terms.<sup>66</sup> Thus, the timeliness and effectiveness of FCC preemption of such barriers is uncertain. In addition, the BOCs themselves may have latitude to engage in certain practices which, while not explicitly unlawful, may hinder competition.<sup>67</sup>

190. If such barriers are likely to seriously delay competitors' ability to avail themselves of new technical and pricing arrangements for access put in place with BOC cooperation, these arrangements could become obsolete. The value of BOC cooperation in establishing these arrangements will then decay; and securing BOC cooperation again in establishing new arrangements once these barriers have been removed but after BOC entry has been authorized will be far harder.<sup>68</sup>

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<sup>66</sup> For example, Texas has imposed certain "buildout" requirements on entrants, requiring them to provide service over at least a certain area which may hamper their ability to enter effectively; requests are pending with the FCC to preempt this and other provisions of the Texas statute. Numerous municipalities reportedly plan to impose fees on new telecommunications providers—but not on incumbents—for use of rights-of-way and local infrastructure. Bryan Gruley, "Disputed Call: Detroit Suburb Sparks Fight by Levying Fees on Telecom Concerns," Wall Street Journal, December 23, 1996. The FCC has decided not to challenge such fees in the case of Troy, Michigan.

<sup>67</sup> For example, some incumbent LECs are said to be signing exclusive access agreements with landlords of multi-unit buildings, housing a high density of customers. Such agreements could stifle the ability of entrants to compete, by denying them the opportunity to attain economies of density in a given area. A provision prohibiting such agreements was dropped from the Act; nevertheless, permitting such agreements can hinder competition.

<sup>68</sup> A concern is that a standard which links BOC entry to removal of regulatory barriers beyond its influence may discourage BOC cooperation, because cooperation may fail to yield a reward. There are several responses to this concern however. First, a BOC's ability to influence the regulatory process in a state should not be underestimated. Second, requiring an open market as a condition for BOC entry can help persuade states to do more to remove remaining barriers. Third, and most importantly, dismantling such barriers need not impose onerous delay; whereas authorizing BOC entry before the local market is open can seriously jeopardize prospects for opening it in the future. The reasons are twofold. (a) Such barriers may prevent commercial use by entrants of the BOCs wholesale inputs and prevent the BOC from demonstrating that their systems will work under actual usage. (b) As noted in the text, even if the systems would work today, these systems could require major changes if sufficient time elapses before entry. Thus, if entrants cannot avail themselves of these new systems for some time due to the presence of residual barriers, the initial BOC cooperation in establishing these new systems will have had only limited value; and securing future BOC cooperation in updating these systems once these barriers have been removed will be more difficult if BOC entry has already been authorized. As a practical matter, however, I believe that meaningful BOC implementation of the competitive checklist is likely to result in opening the local market in most cases.

**E. Conclusion: The Department of Justice's Entry Standard Is Procompetitive**

191. The major remaining bottleneck in telecommunications today, controlled by the BOCs in most regions, is local networks. These regulated local monopolies are an inefficient institution, whose replacement by a mix of local competition and lighter regulation can generate large net social benefits in local services, in integrated services, and in protecting and promoting competition in long-distance services while allowing BOC entry. This is the guiding philosophy of the 1996 Act.


192. Authorizing BOC entry when—and only when—the BOC's local market is open would go a long way to promoting local competition and achieving the goals of the Act. The Department of Justice's entry standard embodies this principle. It strikes a good balance between attempting to rapidly realize the benefits from BOC entry while properly addressing the competitive concerns, and therefore serves the public interest in competition.

I hereby swear, under penalty of perjury, that the foregoing is true to the best of my knowledge and belief.



Marius Schwartz

Subscribed and sworn before me this 15<sup>th</sup> day of May, 1997.



Notary Public

My Commission Expires March 31, 2001

**Table 1: Telecommunications Revenues (1995) <sup>1</sup>**

	(1)	(2)	(3)	(4)
	All LECs	% of Total	BOCs	% of Revenues
1. All LECs, and BOCs alone	(\$ billion)	Telecom	(\$ billion)	of All LECs <sup>2</sup>
		Revenues <sup>2</sup>		
<b>Local Revenues</b>	<b>56.6</b>	<b>36.9%</b>	<b>43.0</b>	<b>76%</b>
Local Exchange Service <sup>3</sup>	45.0	29.3%	35.2	78%
Local Private Line	1.2	0.8%	0.9	75%
Miscellaneous Local Revenues <sup>4</sup>	10.4	6.8%	6.9	66%
<b>Network Access Services <sup>5</sup></b>	<b>33.4</b>	<b>21.8%</b>	<b>22.5</b>	<b>67%</b>
Federal Subscriber Line Charges	7.0	4.6%	5.8	83% <sup>6</sup>
Access Charges paid by LD Carriers	26.4	17.2%	16.7	64% <sup>6</sup>
<b>Toll Revenues</b>	<b>12.8</b>	<b>8.3%</b>	<b>9.5</b>	<b>74%</b>
Switched Service (intraLATA toll)	10.1	6.6%	7.3	73%
Miscellaneous Toll Revenues <sup>7</sup>	2.7	1.7%	2.2	81%
<b>Total All Reporting LECs</b>	<b>102.8</b>	<b>67.0%</b>	<b>75.0</b>	
<b>2. CAPs and CLECs</b>	<b>0.6</b>	<b>0.4%</b>		
<b>3. LD Carriers' Net Toll Revenues <sup>8</sup></b>	<b>50.0</b>	<b>32.6%</b>		
<b>Total Telecommunications Revenues</b>	<b>153.4</b>	<b>100.0%</b>		

<sup>1</sup> Source: FCC, Telecommunication Relay Service (TRS) Fund Worksheet Data, December 1996. All data are for 1995. Abbreviations: LECs – Local Exchange Carriers; CAPs – Competitive Access Providers; CLECs – Competitive Local Exchange Carriers; BOCs – Bell Operating Companies; LD – Long Distance.

<sup>2</sup> Col. (2) is \$ bn in Col. (1) ÷ \$153.4 bn (Total Telecommunications Revenues). Col. (4) is Col. (3) as % of Col. (1).

<sup>3</sup> Includes primarily revenues from Basic Local Services (approx. \$34 bn) and some vertical services.

<sup>4</sup> Includes primarily Directory Revenues (approx. \$4 bn), Nonregulated Revenues (approx. \$3.6 bn), and Carrier Billing and Collection Revenues (approx. \$1 bn).

<sup>5</sup> Of which \$8.9 bn is intrastate access, and \$24.5 bn is interstate (including \$7 bn in Federal Subscriber Line Charges). The FCC's Statistics of Communications Common Carriers 1995/96 (table 2.9) breaks down interstate access charges paid by LD carriers (i.e. not including SLC) into switched and dedicated access, with switched access accounting for 80%. No comparable breakdown is reported for intrastate access.

<sup>6</sup> This percentage is computed using data from the FCC's Statistics of Communications Common Carriers 1995/96 (table 2.9, lines 154 to 158), which reports the break-down of BOCs' Network Access Revenues in SLC and Access Charges paid by LD Carriers. TRS Fund Worksheet Data does not report such information.

<sup>7</sup> Includes \$1.6 bn in Operator Service, Pay Telephone and Card Revenues, \$.9 bn in Long Distance Private Line Service, and \$.25 bn in All Other Long Distance Revenues.

<sup>8</sup> Total Gross Revenues of Long-Distance Carriers are \$76.4 bn, of which \$26.4 bn were paid in access charges to LECs. The \$76.4 bn figure includes approx. \$3.3 bn from intraLATA toll (AT&T estimate), and the rest is interLATA. Of the \$76.4 bn, 93% accrued to IXC's, 5% to Toll Resellers and the rest to Operator Service Providers, Pre-Paid Calling Card Providers, Pay Telephone Providers and Others.

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Associate Professor, August 1987–May 1993  
Assistant Professor, January 1983–July 1987 (part time in Fall 1982)

Director of Graduate Studies Spring 1993–Spring 1995

#### Undergraduate Courses Taught

Antitrust  
Industrial Organization  
International Economics  
Macroeconomic Theory  
Mergers & Corporate Control  
Microeconomic Principles  
Topics in Competition and Regulation

#### Graduate Courses Taught

Industrial Organization  
Macroeconomic Theory I  
Macroeconomic Theory II  
Monetary Policy  
Microeconomics: special course in Pew  
Freedom Fellows Program

### *Council of Economic Advisers, Executive Office of the President*

Senior Economist, June 1995–May 1996 (part-time consultant April & May 1995 and June 1996).

Served as the senior economist principally responsible for antitrust, regulated industries, and other industrial organization matters. Work included: 1996 Telecommunications Act; competition in international satellite services; competition in the electric utility industry; reforming the patent and trademark office; intellectual property rights; international trade disputes; health care.

### *U.S. Department of Justice, Antitrust Division*

Consultant, June 1996–present  
Economist (part time), January 1983–May 1995  
Economist (full time), October 1980–December 1982



### ***Regulatory***

Analyzed various competitive issues posed by Bell Company entry into long-distance telecommunications services and submitted affidavit to Federal Communications Commission on behalf of Justice Department.

### ***Testimony***

Presented expert testimony to courts in successful challenges of merger and of consent decree.

### ***Mergers***

Investigated mergers in several industries and helped to design appropriate relief.

### ***Business Practices***

Worked on vertical-restraints cases (tying, exclusive dealing, resale price maintenance, exclusive territorial arrangements) and horizontal-conduct cases (collusion and predation).

### ***Legislation, Congressional Matters, Division Reports***

Provided input to Antitrust Division's Merger Guidelines (1992) and Vertical Restraints Guidelines (1984). Helped draft Division comments on various Congressional legislation and responses to inquiries in several areas including price discrimination and dealer termination.

### ***Cooperation with Foreign Competition Authorities***

Interacted with competition officials from several countries and agencies. Helped comment on following documents: Canadian Fair Trade Commission's guidelines on predatory pricing, and on price discrimination; Japanese Fair Trade Commission's guidelines on distribution systems, on sole import distributorships, and on joint R&D; Korean Fair Trade Commission's guidelines on unfair trade practices in international agreements; OECD papers on predatory pricing, on competition policy and franchising, and on interaction between trade and competition policies.

### ***Other Professional Experience***

Senior Advisor, The Brattle Group, Economic, Environmental & Management Counsel, Cambridge, MA and Washington DC, November 1996-present.

OECD: Lecturer in Seminar on Vertical Restraints for competition officials from Czech Republic, Hungary, Poland, and Slovakia in Cracow, Poland, November 20-22, 1995.

Consultant in private antitrust and regulatory matters.

ILADES: Participated in designing and teaching a short course in industrial organization to policymakers and executives in Santiago, Chile, June 1994.

Pew Freedom Fellows Program: Taught short course in microeconomics to twenty Fellows from transition economies, annually, January 1993-present. (Fellows hold middle-level or upper-level positions in government and private business.)

Center for Economic Development, Slovakia: Academic Advisory Board.

World Bank: Consultant.

Abt Associates/USAID: Advised Government of Zimbabwe in Harare on formulating antitrust law, summer 1993 (consultant to Abt, work funded by USAID's Implementing Policy Change Project).

## LANGUAGES

French, Hebrew, Romanian (speak and read all three fairly well; write French and Hebrew adequately)

## HONORS

U.S. Department of Justice, Antitrust Division: Special Achievement Awards  
Brookings Institution: Research Fellow, 1979-80  
University of California, Los Angeles: Earhart Fellowship, 1977-78  
University of California, Los Angeles: Regents Fellowship, 1976-77  
London School of Economics: Premchand Prize in Monetary Economics, 1976

## PUBLICATIONS

### *Refereed Journals*

- "A Quality-Signaling Rationale for Aftermarket Tying," *Antitrust Law Journal*, vol. 64 (Winter 1996): 387-404 (with Gregory J. Werden).
- "The Non-Existence of Pairwise-Proof Equilibrium," *Economics Letters*, vol. 49 (1995): 251-259 (with R. Preston McAfee).
- "Equity as a Call Option on Assets: Some Tests for Failed Banks," *Economics Letters*, vol. 48 (1995): 389-397 (with Behzad Diba and Chia-Hsiang Guo).
- "Parallel Imports, Demand Dispersion, and International Price Discrimination," *Journal of International Economics*, vol. 37 (November 1994): 167-195 (with David Malueg).
- "Opportunism in Multilateral Vertical Contracting: Nondiscrimination, Exclusivity, and Uniformity," *American Economic Review*, vol. 84 (March 1994): 210-230 (with R. Preston McAfee).
- "Preemptive Investment, Toehold Entry, and the Mimicking Principle," *RAND Journal of Economics*, vol. 22 (Spring 1991): 1-13 (with David Malueg).
- "Patent Protection through Discriminatory Exclusion of Imports," *Review of Industrial Organization*, vol. 6 (No. 3, 1991): 231-246.
- "Third-Degree Price Discrimination and Output: Generalizing a Welfare Result," *American Economic Review*, vol. 80 (December 1990): 1259-1262.
- "Investments in Oligopoly: Welfare Effects and Tests for Predation," *Oxford Economic Papers*, vol. 41 (October 1989): 698-719.
- "Entry Deterrence Externalities and Relative Firm Size," *International Journal of Industrial Organization*, vol. 6 (June 1988): 181-197 (with Michael Baumann).
- "The Competitive Effects of Vertical Agreements: Comment," *American Economic Review*, vol. 77 (December 1987): 1063-1068.
- "The Nature and Scope of Contestability Theory," *Oxford Economic Papers*, vol. 38 Supplement (November 1986): 37-57.  
This issue of the journal was published in parallel as *Strategic Behavior and Industrial Competition*. Morris et al. Eds., Oxford University Press, 1986.

"The Perverse Effects of the Robinson-Patman Act," *Antitrust Bulletin*, vol. 31 (Fall 1986): 733-757.

"Divisionalization and Entry Deterrence," *Quarterly Journal of Economics*, vol. 101 (May 1986): 307-321 (with Earl Thompson).

"Illinois Brick and the Deterrence of Antitrust Violations," *Hastings Law Journal*, vol. 35 (March 1984): 629-668 (with Gregory Werden).

"Contestable Markets: An Uprising in the Theory of Industry Structure: Comment," *American Economic Review*, vol. 73 (June 1983): 488-490 (with Robert Reynolds).

#### **Monographs, Book Reviews, and Other Publications**

"Telecommunications Reform in the United States: Promises and Pitfalls," in Paul J.J. Welfens and George Yarrow, Eds., *Telecommunications and Energy in Systemic Transformation*, Heidelberg and New York: Springer, 1997.

"Protecting Intellectual Property by Excluding Infringing Imports: An Economist's View of Section 337 of the U.S. Tariff Act," *Patent World*, Issue 25 (September 1990): 29-35.

Review Essay of: Jean Tirole, *The Theory of Industrial Organization*, MIT Press, 1988. *Managerial and Decision Economics*, Vol. 11 (May 1990): 131-139.

Book Review of: J. Stiglitz and F. Mathewson eds., *New Developments in the Analysis of Market Structure*, MIT Press, 1988. *Journal of Economic Literature*, Vol. 36 (March 1988): 133-135.

"Vertical Restraints," published in German by *Forschungsinstitut für Wirtschaftsverfassung und Wettbewerb* by E.V. Köln, Heft 5, 1984.

#### **DISCUSSION PAPERS AND WORK IN PROGRESS**

"Towards Competition in International Satellite Services: Rethinking the Role of INTELSAT," paper distributed at OECD Ad Hoc Meeting of Experts on Competition in Satellite Services, Paris, June 1995 (with Joseph E. Stiglitz and Eric Wolff).

"Competitive Markets in Generation: Economic Theory and Public Policy," paper presented at conference on "Electric Utility Restructuring: Whither Competition?" organized by International Association for Energy Economics Los Angeles Chapter, and Micronomics Inc., Los Angeles, May 1995.

"Exclusive Dealing for Rent Extraction," mimeo, January 1994 (with Serge Moresi and Francis O'Toole).

"Option Values of Deposit Insurance and Market Values of Net Worth: Some Evidence for U.S. Banks," mimeo, December, 1992 (with Behzad Diba and Chia-Hsiang Guo).

"Do Sunk Costs Discourage or Encourage Collusion?" U.S. Department of Justice, Antitrust Division, EPO Discussion Paper 85-10 (September 1985).

"Signalling Equilibria Based on Sensible Beliefs: Limit Pricing Under Incomplete Information," U.S. Department of Justice, Antitrust Division, EPO Discussion Paper 84-4 (May 1984) (with Maxim Engers).

## OTHER SCHOLARLY ACTIVITIES

### *Seminars Presented*

Belcore  
Bureau of Competition Policy, Industry Canada  
California State University, Hayward  
Columbia University  
ENSAE, Paris  
Federal Trade Commission  
Georgetown University  
George Washington University  
International Trade Commission  
Johns Hopkins University  
New York University  
Pennsylvania State University  
Simon Fraser University  
Tulane University  
U.S. Department of Justice  
University of Alberta  
University of British Columbia  
University of Calgary  
University of California, Davis  
University of California, Los Angeles  
University of Maryland  
University of Montreal  
University of Pennsylvania  
University of Toronto  
University of Virginia

### *Conferences: Speaker or Discussant*

Economics of Interconnection Forum, Federal Communications Commission, Washington DC, May 1996  
Authors' Symposium on Competition Policy and Intellectual Property Rights, Canadian Bureau of Competition, Aylmer, Quebec, May 1996  
Electric Generation Association, Annual Meetings, West Palm Beach, April 1996  
"Wheeling & Dealing: Opportunities and Challenges in the New Electric Industry," conference sponsored by the Center for Regulatory Studies, Illinois State University and the Institute of Government and Public Affairs, University of Illinois- Urbana, Chicago, April 1996  
"New Social and Economic Approaches to a Multimedia World," OECD Symposium, Tokyo, March 1996  
"Telecommunications and Energy Regulation in Transition Economies," Center for Economic Development, Bratislava, October 1995  
"Electric Utility Restructuring: Whither Competition?" organized by International Association for Energy Economics Los Angeles Chapter, and Micronomics Inc., Los Angeles, May 1995.  
"New Learning on Barriers to Entry in Competition Policy," Canadian Bureau of Competition, Ottawa, March 1995  
Southeastern Economic Theory Meetings, Charlottesville, October 1994  
EARIE Conference, Tel Aviv, September 1993  
Midwest International Economics Meetings, Pittsburgh, October 1992  
Latin American Econometric Society, Mexico City, September 1992  
Conference on Industrial Organization, Carleton University, Ottawa, July 1991  
Workshop on Strategic and Dynamic Aspects of International Trade, SUNY at Stony Brook, July 1991

AEI Conference on "Innovation, Intellectual Property and World Competition," Washington DC, September 1990  
EARIE Conference, Lisbon, September 1990  
Conference on "International Trade and Technology," Brussels and London, November 1989  
EARIE Conference, Budapest, August 1989  
Conference on Strategy and Market Structure, Dundee University, Dundee, August 1988  
Conference on "Firm Ownership and Competition," Graduate School of Business, Stanford University,  
June 1987  
EARIE Conference, Berlin, August 1986  
AEA Annual Meetings, Dallas, December 1984

***Referee for Professional Journals***

*American Economic Review*  
*Canadian Journal of Economics*  
*Economica*  
*Economic Journal*  
*International Economic Review*  
*International Journal of Industrial Organization*  
*Journal of Business*  
*Journal of Business Economics*  
*Journal of Economic Dynamics and Control*  
*Journal of Economic Theory*  
*Journal of Economics and Management Strategy*  
*Journal of Industrial Economics*  
*Journal of Political Economy*  
*Managerial and Decision Economics*  
*Quarterly Journal of Economics*  
*Quarterly Review of Economics and Business*  
*RAND Journal of Economics*  
*Review of Industrial Organization*  
*Review of International Economics*  
*Scandinavian Journal of Economics*

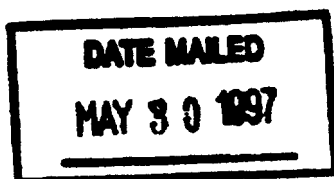
***Outside Evaluator—Research Proposals and Tenure & Promotion Cases***

National Science Foundation  
Small Business Administration  
Several economics departments (identities disclosed on request)

# **EXHIBIT 2**

## **PSCW Second Order**

Public Service Commission of Wisconsin,  
Matters Relating to Satisfaction of Conditions  
For Offering InterLATA Service (Wisconsin  
Bell, d/b/a Ameritech Wisconsin), Docket No.  
6720-T1-120, Findings of Fact, Conclusions  
of Law and Second Order (May 29, 1997)



BEFORE THE  
PUBLIC SERVICE COMMISSION OF WISCONSIN

Matters Relating to Satisfaction of  
Conditions for Offering InterLATA Service  
(Wisconsin Bell, Inc. d/b/a Ameritech  
Wisconsin)

6720-TI-120

**FINDINGS OF FACT, CONCLUSIONS OF LAW,  
AND SECOND ORDER**

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## DISCUSSION

### Background

On October 16, 1996, Wisconsin Bell, Inc. d/b/a Ameritech Wisconsin (Ameritech), filed a Statement of Generally Available Terms (Statement) under § 252(f) of the Telecommunications Act of 1996 (the Act) in anticipation of a Track B approach to requesting authority to provide in-region, originating interLATA service in Wisconsin as provided in § 271(c)(1) of the Act. The Public Service Commission (Commission) opened this proceeding by issuing a Notice of Investigation, Request for Comments, Technical Conference, and Assessment of costs on October 17, 1996. Under § 252(f) of the Act, the Commission had 60 days to complete its review of the Statement, including any reconsideration thereof, unless the submitting carrier agreed to an extension of the period for review. If the review was not completed within the 60-day or extended time frame, the Statement would have been permitted to take effect.

Ameritech filed its wholesale and unbundled services tariffs, in response to the requirement in the Order in docket 05-TI-138, on August 19, 1996. The Federal Communications Commission (FCC) issued its Interconnection Order on August 8, 1996. Given the timing of its initial filing, Ameritech was unable to incorporate in the original filing compliance with the FCC order. In order to make changes to achieve that end, Ameritech refiled its wholesale and unbundled services tariffs, together with its Statement on October 16, 1996. The Eighth Circuit Court temporarily stayed large portions of the FCC Interconnection order on September 27, 1996, and made that stay permanent on October 15, 1996, pending the outcome of the court's review.



The Commission issued an order in this docket, dated December 12, 1996 (first order), that found many deficiencies in Ameritech's proposed Statement. That first order provided Ameritech the option of refileing its Statement and tariffs, including adequate support, in accordance with the changes identified in the Findings of Fact to avoid disapproval of the Statement. In addition, the order required that Ameritech notify the Commission in writing, by December 13, 1996, of its intention to refile and to grant sufficient extension of the Commission's 60-day review period, specified by § 271 of the Act, to assure compliance with the changes required.

Ameritech's Statement filed March 3, 1997, with revisions through March 26, 1997, and all previous versions of Ameritech's Statement are rejected. Items for which some deficiencies or outstanding concerns are identified are: interfacing with operations support systems (OSS), OSS change management system, collocation of remote switches, shared transport, dark fiber, performance benchmarks, maximum time intervals, parity reports, pricing of unbundled ports, pricing of customized routing, information on vertical switch features, and treatment of access revenues for purchasers of unbundled services. In addition, Ameritech must submit to the Commission within 14 days, proposed tariff revisions to meet requirements identified in the Ultimate Findings of Fact. All of the items contained in the Threshold to Refile (Appendix B) must be submitted along with any future filing of the Statement.